CLAIMS

1.

2. A method for recording data, comprising:

recording management data in a first file;

recording n (n ≥ 2) kinds of streams in a second file, the streams being distinguished from each other, depending on the presence and type of a time map showing a relationship between time and recording position, by a predetermined process; and

arranging flags in the first file, flags being used for distinction of n kinds of streams recorded in the second file.

3. A method for recording data, comprising:

recording management data in a first file;

recording n kinds of streams in other files such that first, second, third, ..., and nth streams are recorded in second, third, ..., and (n+1)th files, respectively, the streams being distinguished from each other, depending on the presence and type of a time map showing the relationship between time and recording position, by a predetermined process; and

arranging flags in the first file, the flags being used for distinction of the n kinds of streams.

4. A method for recording data, comprising:

recording management data in a first file;

recording n kinds of streams in second to (m+1)th (m≥2) files, respectively, the streams being distinguished from each other, the streams being distinguished from each other, depending on the presence and type of a time map showing the relationship between time and recording position, by a predetermined process; and

arranging flags in the first file, the flags being used for distinction of the n kinds of streams.

5. (Amended) The method according to Claim 2, wherein

time-map-containing streams are set to first to kth ($k \geq 1$, $k \leq n-1$) streams,

time-map-free streams are set to (k+1)th to nth streams, and

time maps related to the first to kth streams are recorded in the first file or

a third file.

6. The method according to Claim 5, wherein when n=2 and k=1, a

time-map-containing stream is set to a first stream and a time-map-free stream

is set to a second stream.

7. The method according to Claim 3, wherein

time-map-containing streams are set to first to kth streams,

time-map-free streams are set to (k+1)th to nth streams, and

time maps related to the first to kth streams are recorded in the first file or

an (n+2)th file.

8. The method according to Claim 4, wherein

time-map-containing streams are set to first to kth streams,

time-map-free streams are set to (k+1)th to nth streams, and

time maps related to the first to kth streams are recorded in the first file or

an (m+2)th file.

9. The method according to Claim 2, wherein a 1-PMT partial TS

(Transport Stream) having one PMT (Program Map Table) is set to a first stream

and another stream is set to a second stream.

10. The method according to Claim 2, wherein a first stream is at least

a 1-PMT partial TS and a time-map-free 1-PMT partial TS is set to a second

stream.

11. The method according to Claim 9, wherein one multi-PMT stream

including a plurality of 1-PMT streams is set to a second stream.

12. The method according to Claim 10, wherein one multi-PMT stream

including a plurality of 1-PMT streams is set to a second stream.

13. The method according to Claim 9, wherein

a plurality of streams or a plurality of 1-PMT streams are combined into

one 1-PMT stream, and

the stream is set to the first stream.

14. The method according to Claim 10, wherein

a plurality of streams or a plurality of 1-PMT streams are combined into one 1-PMT stream, and

the stream is set to the first stream.

15. The method according to Claim 13 or 14, wherein the plurality of streams or the plurality of 1-PMT streams in Claim 13 or 14 are partial TSs of different channels.

16. The method according to Claim 13 or 14, wherein the plurality of streams or the plurality of 1-PMT streams in Claim 13 or 14 are full TSs.

17. The method according to Claim 2, wherein a stream whose time information is described in the management data is set to a first stream and a stream whose time information is not described in the management data is set to a second stream.

18. The method according to Claim 17, wherein the time information is PTS (Presentation Time Stamp).

19. The method according to Claim 2, wherein the stream formats of first and second streams are known.

20. The method according to Claim 2, wherein details on a video, audio, or data format of each of the first and second streams are known.

21. The method according to Claim 2, wherein a stream whose stream format is unknown is recorded in another file.

22. The method according to Claim 2, wherein a stream whose details on a video, audio, or data format are unknown is recorded in another file.

23. The method according to Claim 2, wherein a stream transmitted by storage broadcasting is set to a second stream.

24. A method for recording data, wherein management data includes a part or all of stream-format identification information, a flag indicating whether the corresponding stream is a 1-PMT partial TS or another TS, the number of

PMTs, the number of multiplexed channels in the other TS, and TS-format configuration information, and also includes every channel a part or all of broadcasting-station information, a moving-picture data compression standard, an audio data compression standard, a still-picture data compression standard, an animation data compression standard, a flag indicating the presence or absence of a time map, a flag indicating the presence or absence of time information, and a flag indicating whether the corresponding stream is a standard broadcast stream or a storage broadcast stream.

25. The method according to Claim 24, wherein

MPEG video, H.264 video, or Windows (registered trademark) Media video is shown as the moving-picture data compression standard,

MPEG audio, Dolby audio, or DTS audio is shown as the audio data compression standard, and

JPEG or PNG is shown as the still picture data compression standard.

26. A data recording apparatus for recording data by the method according to any one of Claims 2 to 4 and/or a data playback apparatus for playing data recorded by the method according to any one of Claims 2 to 4.

27. A recording medium in which data is recorded by the method according to any one of Claims 2 to 4.

28. A method for recording data such that a plurality of streams or channels are simultaneously recorded, the method comprising:

recording each stream in a file as a first stream whose relationship between time and recording position is recorded or a second stream whose relationship therebetween is not recorded; and

recording management data for distinction of the first and second streams in another file.

29.

30. (Amended) A method for recording data, comprising:

recording management data in a first file;

setting one or more time-map-containing streams to first to kth ($k \geq 1$, $k \leq n$-

1) streams and recording the streams in second and subsequent files, respectively, each stream certainly containing a time map; and

setting one or more unrestricted streams to (k+1)th to nth streams and recording the streams in another or other files, respectively.

31. A method for recording data, wherein

management data is recorded in a first file;

each unrestricted stream is regarded as any one type of a time-map-containing stream, a table-containing stream which contains a table showing the relationship between arrival time and recording address of the broadcast stream, and a table-free stream which does not contain a table showing the relationship between time and recording address, and

a flag indicating the type is recorded separately.

32. The method according to claim 31, wherein

management data is recorded in a first file;

each unrestricted stream is divided into predetermined stream segments and each segment is regarded as any one type of a time-map-containing stream segment, a table-containing stream segment which contains a table showing the relationship between arrival time and recording address of the broadcast stream segment, and a time-map-free table-free stream segment which does not contain either of the time map and the table, and

a flag indicating the type is recorded separately.

33. The method according to Claim 31, wherein each flag is recorded in the first file.

34. A method for recording data, wherein

management data is recorded in a first file;

each unrestricted stream is regarded as any one type of a table-containing stream, which contains a table showing the relationship between arrival time and recording address of the broadcast stream, and a table-free stream, which does not contain a table showing the relationship between time and recording address, and

a flag indicating the type is recorded separately.

35. A method for recording data, wherein

management data is recorded in a first file;

each unrestricted stream is divided into predetermined stream segments and each segment is regarded as any one type of a table-containing stream segment, which contains a table showing the relationship between arrival time and recording address of the broadcast stream segment, and a time-map-free table-free stream segment, which does not contain either of the time map and the table, and

a flag indicating the type is recorded separately.

36. The method according to Claim 34 or 35, wherein each flag is recorded in the first file.

37. The method according to Claims 30, 31, or 34 wherein a time map or a table related to each unrestricted stream is recorded in the first tile or another file, which is not disclosed in Claims 30, 31, or 34.

38. The method according to Claim 30, wherein a time map related to each time-map containing stream and a table related to each unrestricted stream are recorded in the first file or another file, which is not disclosed in Claim 30.

39.

40.